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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,261	12/19/2000	Gary R. McLuen	NEI-00103	7751
7590 06/17/2004				
Jonathan O. Owens Haverstock & Owens LLP 162 North Wolfe Road Sunnyvale, CA 94086		EXAMINER QUAN, ELIZABETH S		
		ART UNIT PAPER NUMBER 1743		

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/742,261	Applicant(s) MCLUEN ET AL.	
	Examiner Elizabeth Quan	Art Unit 1743	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 24-26 and 35-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-26 and 35-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>030804.012004</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 24-26, 35-42 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,844,306 to Hill.

Hill discloses a purging system, which may be used with a synthesizer (see figure). The system has a first bank (18) of vials and second bank (17) of vials each of which is associated with a first drain and second drain, respectively (see figure). Alternatively, since each bank of vials contains two banks of vials, each row of vials within the bank may be considered by itself a bank (see figure). Since each row of vials within a bank share the same drain line, the endpoints of each drain line proximal to the valve or the drain lines themselves may be considered the first and second drains (see figure). The system also has a pressurizing system for creating a pressure differential within a selective one of the first bank of vials and the second bank vials (see figure; col. 1, lines 26-32). The system is equipped with an air compressor (12) for pressurizing each bank of vials with different pressure (col. 1, lines 26-50). First (51) and second (55) waste tubes are in operative engagement with the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. The waste tubes may be viewed as a continuous line from the tank to be filled to the drain (see figure). The system is capable of selectively and simultaneously purging the first bank of vials and second bank of vials by the manipulation of valves; however, this is more evident when each row of vials within a bank is viewed as a bank by itself. The connection or contact among the pipes would form a seal

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among these pipes. Since the term flexible is a relative term, the seal would have some degree of flexibility.

It is noted that "configured for use with a synthesizer containing a first bank of vials and a second bank of vials wherein the first bank of vials has a first drain and the second bank of vials has a second drain" is a statement of intended use, such that further mention of the elements in this intended use statement is not positively recited.

3. Claims 24, 35, 40 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,424,038 to Benz et al.

Benz et al. disclose a purging system (16) configured for use with a synthesizer, which has a first bank (15) of vials and second bank (14) of vials each of which is associated with first and second drains, denoted as either reference character (1) or (3) depending on the position of the slider (166) (figs. 1, 2, 4-7; col. 4, lines 10-26). A pressurizing system of pumps and valves creates a pressure differential within a selective one of the first bank of vials and second bank of vials. A first waste tube (167) engages the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials (col. 4, lines 10-26).

4. Claims 24-26 and 35-42 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,090,850 to Chen et al.

Chen et al. disclose a purging system for use with a synthesizer containing a first bank of vials and second bank of vials wherein the first bank of vials has a first drain and the second bank of vials has a second drain (figs. 1-5; col. 4, lines 29-47). The first bank of vials is contained within a first tray, which has means (28) on two sides for drawing a vacuum (col. 4, lines 42-47). Multiple trays with their own set of vials may be connected and operated serially,

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such that the first bank of vials within a first tray may be connected and operated serially with a second bank of vials contained within a second tray (col. 4, lines 42-47). The connection or contact among the pipes would form a seal among these pipes. Since the term flexible is a relative term, the seal would have some degree of flexibility.

5. Claims 24, 25, 35-38, 40, 41 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,874,691 to Chandler.

Chandler discloses a purging system including a waste tube capable of being selectively engaged to different drains and a vacuum for creating a pressure differential (figs. 4 and 5).

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 31-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,472,672 to Brennan in view of WO 98/10857 to Zuckermann et al.

Brennan discloses a method of selectively and sequentially dispensing a plurality of reagent solutions to a plurality of vials divided into first and second banks of vials and selectively purging material for the first and second banks of vials using a polymer synthesis apparatus (20) (figs. 1-7).

The polymer synthesis apparatus comprises a delivery assembly (43) for controlling delivery of liquid reagents through an array of nozzles (22) mounted on mounting blocks (37) of head assembly (21) in nozzle rows (40) and columns (41), which align with selected vials (26) of plate (32) within sliding plate (33) of base assembly (25) via transport mechanism (27) (figs. 1-7; col. 5, line 60-col. 7, line 16; col. 8, lines 7-35). Each bank or row of nozzle is coupled to a

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different liquid reagent applied in a particular polymer synthesis (col. 6, lines 49-56). For instance, the first row of nozzles may only dispense the activator tetrazole while the second row dispenses amidite thymidine (col. 6, lines 56-59). In oligonucleotide synthesis, this order of liquid reagent distribution may continue down the line for amidites adenosine, cytosine, and guanine, the auxiliary base AnyN, solvent wash/reaction solvent acetonitrile, Cap acetic anhydride, Cap N-methylimidazole, iokine, and deblockers dichloroacetic acid or trichloroacetic acid; all of which are reagents used for the synthesis of defined sequence oligonucleotides (col. 6, lines 59-66). The step of dispensing is performed in a parallel fashion since all wells within a row or bank are simultaneously addressed. The step of dispensing is performed in a serial fashion since each row or bank is separately addressed. The system permits simultaneous alignment of all the wells with all the nozzles (col. 6, lines 32-39).

Each vial contains a retaining device (84) positioned in the bottom of the vial between orifice (74) and solid support (75) for preventing the passage of the solid support through the orifice (figs. 5 and 6). The retaining device is preferably a polyethylene or glass fiber frit, which acts as a filter membrane permitting reagent solution to flow through while retaining the solid support and polymer chain grown thereon (col. 10, line 59-63).

After synthesis completion, reagent solution is purged from the vials through the orifice into drain (81) by increasing the gas pressure differential above the predetermined amount, which overcomes the capillary forces in the orifice (figs. 1, 3, 4-6; col. 10, lines 44-49). Subsequently, the purged reagent solutions may be drawn out of the drain through a waste tube (83), which may be coupled to a vacuum pump to create the pressure differential by forming a vacuum in the drain (figs. 1, 3, 4-6; col. 10, lines 50 and 51; col. 11, lines 55-57). Second and

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third waste tubes (82) are integrated with the gas flow assembly employed to flush the headspace in common chamber (31) of reagent toxins (col. 9, lines 34-66; col. 11, lines 3-6). The waste tubes also control the pressure differential in the common chamber for purging the vials (col. 10, line 50-col. 11, line 28).

Note: The ambiguous term “engaging” may be interpreted as involving, operating, or using, such that a drain is engaged with a bank of vials with a waste tube when it is put in operation for purging the contents of the vials. The ambiguous term “disengaging” may be interpreted as not involving, not operating, or not using, such that the waste tube is disengaged from the drain when it is not purging the contents of the vials. Brennan discloses that purging occurs only after the completion of the synthesis reaction, such that the drain is engaged with a bank of vials with a waste tube when purging is in progress (i.e. the waste tube is withdrawing materials from the vials). During synthesis, purging is not in progress such that the waste tube is disengaged from the drain (i.e. waste tube is not active).

Brennan discloses engaging a drain with all banks of vials. Brennan fails to disclose engaging a drain with a certain bank of vials. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method and apparatus of Brennan to engage a drain with a certain bank of vials since it is well suited for solid phase synthesis chemistry reactions such as polypeptides, peptoids, and polynucleotides in which a sequence of reaction steps are carried out in parallel using a plurality of reaction vessels as taught by Zuckermann et al. (abstract; figs. 2 and 4; page 3, lines 12-27; page 6, lines 16-19 and 26-28; col. 8, lines 7-9; col. 12, lines 13-15).

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8. Alternatively, claims 25, 36, 37, 41, 42 are rejected under 35 U.S.C. 103(a) as obvious over (U.S. Patent No. 3,844,306 to Hill) or (U.S. Patent No. 5,472,672 to Brennan in view of WO 98/10857 to Zuckermann et al.) or (U.S. Patent No. 4,090,850 to Chen et al.) in view of U.S. Patent No. 2,684,255 to Abele et al.

In the event one would argue that Hill or Brennan in view of Zuckermann et al. or Chen et al. do not disclose a flexible drain seal between the first waste tube and the selective one of the first drain and the second drain, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Hill or Brennan in view of Zuckermann or Chen et al. to provide these flexible seals between the drains and tubes for connecting these sections in a manner of preventing leaks and minimizing stresses as taught by Abele et al. (col. 1, line 1-col. 2, line 4).

### ***Response to Arguments***

9. Applicant's arguments filed 4/19/2004 have been fully considered but they are not persuasive.

10. Applicant argues that Hill does not teach a purging system for use with a synthesizer or a system including first and second bank of vials. Applicant argues that Hill does not teach a waste tube capable of engaging with a first drain and second drain. Applicant argues that the fill hoses 51 and 55 taught by Hill are not waste tubes. Applicant argues that Hill does not teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank and the second drain to purge material from the second bank of vials. Examiner notes that the response is riddled with statements with no explanation or support for these statements. The claim has not positively recited a synthesizer in combination with the purging system. The



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claims recite in the preamble “a purging system configured for use with a synthesizer container a first bank of vials and a second bank of vials wherein the first bank of vials has a first drain and the second of vials has a second drain...” The purging system is configured to be used with a synthesizer but there need not be a synthesizer. Examiner does not need to provide prior art that explicitly teaches the synthesizer since the Applicant is only claiming and positively reciting the purging system. Therefore, the structural details of the synthesizer involving the first and second bank of vials and first and second drain are not positively recited and fail to further the limit the claim since they are directed to a limitation that is not positively recited—the synthesizer. Hill does not teach a waste tube capable of engaging with a first drain and second drain. By activation of the valve, fluid communication of different banks with the waste tubes is established. The fill hoses (51) and (55) are waste tubes, which is a broader term that includes hoses. A tube is defined as any of various usually cylindrical structures or devices or a hollow elongated cylinder, especially one to convey fluids by Merriam-Webster Collegiate Dictionary. These fill hoses are waste tubes since they draw fluid from a bank of containers to a tank.

11. Applicant argues that Benz et al. do not teach a purging system for use with a synthesizer, which includes a first and second bank of vials. Applicant argues that Benz et al. do not teach a waste tube capable of engaging with a first drain and a second drain. Applicant argues that the connecting conduits of Benz et al. are not waste tubes and do not engage a drain to purge material from a bank vials. Applicant argues that Benz et al. do not teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. Examiner emphasizes that the claimed has not positively recited the synthesizer as well as its components of first bank of

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vials and second bank of vials each with their own drain. Examiner need not show prior art that shows a synthesizer when the claim is not claiming the synthesizer. The claim is claiming the purging system. Bez et al. do teach a first waste tube by disclosing conduits. The term tube is broad and includes conduits. See definition cited above. By way of the slider the waste tube can engage different banks of vials.

12. Applicant argues that Brennan does not teach a waste tube capable of engaging with a first drain and second drain nor for selective engaging one of a first drain and second drain. Applicant argues that Zuckermann does not teach a waste tube capable of engaging with a first drain and second drain. Applicant argues that the combination of Brennan and Zuckermann does not a waste tube for engaging a selective one of a first and second drain. Examiner notes the claim is only reciting a purging system with a pressurizing system and waste tube since the synthesizer with the banks of vials and respective drains are not positively recited. The claim is met by a vacuum tubing or hose and a vacuum, since one end of the vacuum tubing or hose is connected to a vacuum to create the pressure differential and the other end is capable of connecting to any drain whether it be a first microtiter plate with a bank of vials the first time or different second microtiter plate with a bank of vials the second time. The vacuum tubing or hose may be re-used to attach to a number of different things. Brennan discloses a waste tube that may be coupled to different drains of different things. The selectivity of the engaging is determined by the operator. The operator may couple the waste tube to one drain of a microtiter plate or to another drain of another microtiter plate. Zuckermann was cited to show that it is advantageous to be able to drain different banks of vials independent of other banks. Zuckermann need not show the waste tube since Brennan does.

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***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (571) 272-1261. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Quan  
Examiner  
Art Unit 1743

eq

  
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